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| <b>Phone:</b> | <b>(571) 272-1000</b>                 | <b>Date:</b>  | <b>November 7, 2005</b> |
| <b>Re:</b>    | <b>Attorney Docket: PF 51186</b>      | <b>cc:</b>    |                         |

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• **Comments:**

In re Application of: **HÖSSEL, et al.**  
Serial No.: **09/771,595**  
Filing Date: **January 30, 2001**  
Attachment: **TRANSMITTAL, APPEAL BRIEF, CLAIMS APPENDIX AND  
FORM PTO-2038**

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

NOV 07 2005

## IN RE APPLICATION

OF: HÖSSEL ET AL.

SERIAL NO.: 09/771,595

FILED: JANUARY 30, 2001

FOR: COSMETIC OR DERMATOLOGICAL SUNSCREEN PREPARATIONS

TO: HON. COMMISSIONER OF PATENTS AND TRADEMARKS

ATTY. DOCKET: PF51186

CONFIRMATION No.: 8957

GROUP ART UNIT: 1616

EXAMINER: MARINA LAMM

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Sir:

1. ☐ NOTICE OF APPEAL: Applicant hereby appeals to the Board of Appeals from the decision dated -/- of the Primary Examiner finally rejecting Claims -/-.
2. ☒ BRIEF ON APPEAL in this application is transmitted herewith.  
☐ Applicants hereby request an Oral Hearing.
3. ☒ Applicants hereby request entry of their timely reply dated November 04, 2005 for purposes of appeal.
4. ☐ Applicants hereby petition for a -/- month extension of time under 37 C.F.R. §1.136(a).  
☐ A petition for a -/- month extension of time including the requisite fee of -/- has been submitted along with the reply under 37 C.F.R. §1.116 dated -/-.
5. ☒ The following fee(s) in the total amount of \$500.00 is(are) paid herewith by credit card (Form PTO-2038 enclosed):  
☒ The \$500.00 fee required under 37 C.F.R. §41.20(b)(2).  
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Respectfully submitted,

NOVAK DRUCE DELUCA &amp; QUIGG, LLP

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(202) 659-0100

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FOR: COSMETIC OR DERMATOLOGICAL SUNSCREEN PREPARATIONS

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Honorable Commissioner

for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

BRIEF ON APPEAL UNDER 37 C.F.R. §41.37

Sir:

This is an appeal from the Examiner's rejection of Claims 1 to 4 and 9 to 19, dated June 03, 2005. Claims 1 to 4 and 9 to 19 are currently pending.

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-none-

-none-

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REAL PARTY IN INTEREST:

The real party in interest is BASF Aktiengesellschaft, 67056 Ludwigshafen, Germany.

RELATED APPEALS AND INTERFERENCES:

To the best of the undersigned's knowledge, there are no related appeals or interferences within the meaning of 37 C.F.R. §41.37(c)(1)(ii).

STATUS OF THE CLAIMS:

The claims on Appeal before the Board of Patent Appeals and Interferences are Claims 1 to 4 and 9 to 19. A copy of these claims is found in the attached Appendix.

STATUS OF THE CLAIMS:

Claims 1 to 4 and 9 to 19 are currently pending in the application. Claims 1 to 4 and 9 to 19 stand rejected.

STATUS OF THE AMENDMENTS:

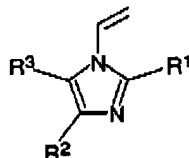
Claims 1 to 4 and 9 to 19 as currently pending were presented with appellants' paper dated November 06, 2003. No amendments were made to the claims subsequently.

SUMMARY OF THE CLAIMED SUBJECT MATTER:

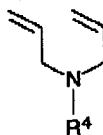
The rejected Claims relate to a mixture of at least one copolymer obtainable by means of solution polymerization, and at least one inorganic UV filter, and more particularly

A) at least one copolymer obtained by

- (i) free-radically initiated solution polymerization of a monomer mixture of
  - (a) 0.01 to 99.99% by weight of at least one monomer chosen from the group consisting of
    - N-vinylimidazoles of formula (I)



in which the radicals R<sup>1</sup> to R<sup>3</sup>, independently of one another, are hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl or phenyl, and dialkylamines of formula (II)



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in which the radical R<sup>4</sup> is C<sub>1</sub>-C<sub>24</sub>-alkyl;

- (b) 0.01 to 99.99% by weight of at least one N-vinylactam;
  - (c) 0 to 50% by weight of at least one unsaturated acid or an unsaturated anhydride;
  - (d) 0 to 50% by weight of at least one free-radically copolymerizable monomer which is different from (a), (b) and (c); and
  - (e) 0 to 10% by weight of at least one monomer having at least two ethylenically unsaturated nonconjugated double bonds which acts as crosslinker, and
- (ii) subsequent partial or complete quaternization or protonation of the polymer where the monomer (a) is not quaternized or only partially quaternized, and
- B) as inorganic UV filter at least one micronized metal oxide chosen from the group consisting of titanium dioxide, zinc oxide, cerium oxide, aluminum oxide, silicon oxide, zirconium oxide, manganese oxide, aluminum oxide and iron oxide;<sup>1)</sup>

and to the use thereof for the preparation of cosmetic and dermatological sunscreen preparations.<sup>2)</sup>

Appellants' invention provides new types of cosmetic compositions for protecting the skin which have improved stability and good formulation properties, and moreover improved sensory properties and a high sun protection factor. In particular, appellants have found that the polymers (component A) can inter alia contribute to the moisturizing and conditioning of the skin and to improving the feel of the skin. By adding the polymers according to the invention, a considerable improvement in skin compatibility can be achieved in certain formulations.<sup>3)</sup>

Appellants have also found that the polymers (A) further stabilize the cosmetic and dermatological preparations, in particular of emulsions which comprise the micronized metal oxide as inorganic UV filter.<sup>4)</sup> The improved stability due to the presence of the polymer in the composition is, for example, illustrated in Example 2 and Comparative Example 2, of the application.<sup>5)</sup> The sunscreen creams investigated in those examples differed from one another only in that Cream C of Example 2 comprised a representative of the polymer constituents (A) whereas Cream D of Comparative Example 2 does not. As stated by appellants in the application, the cream which contained the polymer (A) in combination with the micronized inorganic UV filters (B) was colloidally stable whereas the comparative cream which lacked the polymer component (A) was colloidally unstable.

In addition to those advantages, appellants have found that the combination of the polymer constituent and the inorganic UV filter which is referenced in the claims results in an increase of the

1) Cf., eg., Claims 1 to 4, 9 to 12, 15, 16, 18 and 19; and page 1, indicated lines 4 to 8, page 2, indicated lines 6 to 45, page 3, indicated lines 24 to 44, page 10, indicated lines 27 to 45, of the application.

2) Cf., eg., Claims 13, 14 and 17; and page 2, indicated lines 1 to 4, page 16, indicated lines 24 to 43, of the application.

3) Cf., eg., page 1, indicated line 40, page 2, indicated line 6, page 17, indicated lines 4 to 11, of the application.

4) Cf., eg., page 17, indicated lines 13 to 15, of the application.

5) Cf. page 27, indicated line 4, to page 28, indicated line 11, of the application.

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of the sun protection factor in the cosmetic and dermatological composition.<sup>6)</sup> The increase in the sun protection factor due to the presence of the polymer in the composition is, for example, illustrated in Example 1 and Comparative Example 1, of the application.<sup>7)</sup> The sunscreen creams investigated in those examples differed from one another only in that Cream A of Example 1 comprised a representative of the polymer constituents (A) whereas Cream B of Comparative Example 1 does not. As stated by appellants in the application, Cream A which contained the polymer (A) in combination with the micronized inorganic UV filters (B) exhibited a sun protection factor of 20 whereas the comparative cream which lacked the polymer component (A) only exhibited a sun protection factor of only 15. The combination of the polymer component (A) with the inorganic UV filters (B), accordingly, increased the sun protection factor by a factor of 1.33.

GROUND(S) OF REJECTION TO BE REVIEWED:

Whether the Examiner erred finding that the subject matter of appellants' Claims 1 to 4 and 9 to 19 was unpatentable under 35 U.S.C. §103(a) for being rendered *prima facie* obvious by the teaching of *Dieing et al.* (EP 0 893 117 which corresponds to Serial No. 09/122,097) when taken in view of the disclosure of *Tanner et al.* (US 5,827,508) and of *George et al.* (US 6,165,449).

ARGUMENT(S):

For the following reasons, the Examiner's finding that appellants' Claims 1 to 4 and 9 to 19 are unpatentable under 35 U.S.C. §103(a) in light of the teaching of *Dieing et al.* when taken in view of the disclosure of *Tanner et al.* and of *George et al.* is deemed to be in error.

The Examiner applied the teaching of *Dieing et al.* for showing hair care compositions comprising crosslinked polymers corresponding to the polymer component (A) of appellants mixture,<sup>8)</sup> the disclosure of *Tanner et al.* for showing that it is conventional to employ sunscreen agents in a variety of personal care products, and for showing that the use of surface treated micronized zinc oxide in such personal care products has certain advantages,<sup>9)</sup> and the disclosure of *George et al.* for showing that it is desirable to incorporate sunscreen agents in a variety of cosmetic products including hair care products.<sup>10)</sup> Based thereon, the Examiner concluded that it would have been obvious for a person of ordinary skill in the art to modify the hair care products which are addressed in the teaching of *Dieing et al.* to include the surface treated micronized zinc oxide of *Tanner et al.* with the reasonable expectation to arrive at compositions which exhibit improved photostability, chemical stability, and physical stability.<sup>11)</sup> The Examiner additionally argued that the recognition of

6) Cf., eg., page 17, indicated lines 17 to 24, of the application.

7) Cf. page 25, indicated line 43, to page 27, indicated line 2, of the application.

8) Cf. page 3, lines 1 to 10, of the Office action dated January 13, 2004.

9) Cf. page 3, lines 11 to 16, of the Office action dated January 13, 2004.

10) Cf. page 3, lines 16 to 19, of the Office action dated January 13, 2004.

11) Cf. page 3, line 19, to page 4, line 6, of the Office action dated January 13, 2004.

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another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious, referring to the Board's decision in *Ex parte Obiaya*.<sup>12),13)</sup>

Appellants respectfully submit that the Examiner's position regarding the facts which were conveyed to a person of ordinary skill by the referenced art is not fairly based on the level of skill at the time appellants made their invention.

The statements of *George et al.* upon which the Examiner relies for support of the position that a person of ordinary skill in the art would have used any sun screen agent in any product for personal care is by far too generic to reasonably suggest that a person of ordinary skill in the art considered all sun screen agents as equivalent independent of the nature of the personal care product. To the contrary, *George et al.* point out, albeit with regard to the protection of skin against harmful UV radiation, that the effectiveness of a particular sunscreen agent for its intended purpose depends upon a variety of factors including, for example, the chemical structure, the penetration into the stratum corneum, the spreading properties and the subsequent adherence of the sunscreen agent to the skin.<sup>14)</sup> It is believed to be immediately apparent from the respective remarks of *George et al.* that the same is applicable, *mutatis mutandis*, where the composition is a composition which is intended for the treatment of hair. The disclosure of *George et al.* otherwise focuses on products for the treatment of human skin which contain a certain phthalic acid derivative optionally in combination with a further organic or inorganic sun screen agent noting, that "sunscreen components capable of protecting human skin from the harmful effects of" UV radiation include, *inter alia*, titanium dioxide and zinc oxide.<sup>15)</sup> Additionally, *George et al.* explain that the effect of inorganic or "physical" sunscreen agents is typically due to scattering, reflection and absorption.<sup>16)</sup>

The disclosure of *Tanner et al.* also specifically addresses compositions which are adapted for the protection of human skin from the harmful effects of UV radiation. The skin protection compositions in accordance with the disclosure of *Tanner et al.* comprise, as sun screen agent, a certain surface treated zinc oxide in combination with a dibenzoylmethane sunscreen compound.<sup>17)</sup> *Tanner et al.* also mention, *inter alia*, that zinc oxide is a white or yellowish-white powder.<sup>18)</sup>

In light of the technical background knowledge which is reflected in the disclosures of the secondary references it is therefore clear that, at the time appellants made their invention, a person of ordinary skill in the art considered inorganic pigments such as zinc oxide suitable for sun protection

12) 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985)

13) Cf. page 2, line 21, to page 3, line 2, of the Office action dated October 15, 2004.

14) Cf. col. 1, indicated lines 47 to 54, of US 6,165,449.

15) Cf. eg. col. 4, indicated lines 36 to 64, of US 6,165,449, emphasis added. Cf. also col. 5, indicated lines 6 to 33, of US 6,165,449.

16) Cf. col. 4, indicated lines 33 to 35, of US 6,165,449.

17) Cf. eg. col. 2, indicated lines 18 to 27, of US 5,827,508.

18) Cf. col. 6, indicated lines 28 to 35, of US 5,827,508.

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of the skin. The secondary references fail, however, to suggest or imply that inorganic sunscreen agents would reasonably be considered by a person of ordinary skill in the art as being useful for the protection of human hair. In light of the variety of factors which determine whether a certain sunscreen agent is suitable for a particular purpose, as addressed in the disclosure of *George et al.*, a person of ordinary skill in the art could clearly not infer from the referenced disclosures that an inorganic sunscreen agent which is suitable for the protection of skin is equally suitable for the protection of hair.

The teaching of *Dieing et al.* specifically relates to cosmetic compositions which are specifically adapted for the conditioning of hair in that they comprise a particular polymer which acts as a hair conditioning agent.<sup>19)</sup> On the one hand, the teaching of *Dieing et al.* contains nothing which would suggest or imply that the hair conditioning polymers exhibit any useful properties in the context of cosmetic preparations unless such preparations are adapted for the conditioning of the hair. On the other hand, the teaching of *Dieing et al.*, when taken alone, provides nothing which would motivate a reasonable person of ordinary skill in the art to combine the hair conditioning polymer with an inorganic sunscreen agent.

For example, where the hair conditioning polymer is provided in a preparation which is composed to be removed from the hair, such as rinses and shampoos, any UV filtering compound would have to adhere tightly to the hair in order to prevent that the agent is washed away with the remainders of the rinse or the shampoo. Where the UV filtering compound remains on the hair either because sufficient adherence is present or because the hair conditioning agent is provided in a preparation which is designed to remain on the hair, the UV protection agent would need to form a suitably spread film on the hair. Under those circumstances and assuming, arguendo, that an inorganic sunscreen agent exhibited sufficient adherence, the inorganic sunscreen agent would accordingly form a pigment film on the individual hairs. Since the inorganic sunscreen agents are white or yellowish-white powders a person of ordinary skill in the art would reasonably expect that a film of the pigments on the hair would give the hair an undesirably dull, ie. unhealthy appearance. It is respectfully noted in this context that a film of a white or yellowish-white powder might be acceptable from an aesthetic point of view if the film is applied to the skin. That does, however, not suggest or imply that the film of a white or yellowish-white powder is still aesthetically acceptable if it is applied to hair.

In the case where the hair conditioning composition is adapted to remain on the hair so that any wash-out of the inorganic sunscreen agent is of no concern, the film of pigment powder could, after the hair is dried, detach from the hair if the adherence properties of the inorganic sunscreen agent are insufficient. Under those circumstances, the protection of the hair which is sought by employing a sunscreen agent would no longer be provided. Either one of those situations, can clearly not be considered as a desirable result. Considering the broad variety of organic UV filtering com-

19) Note page 3, indicated lines 16 to 18, page 9, indicated lines 27 to 32, and page 11, indicated lines 4 to 5, of *Serial No. 09/122,097*.



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pounds which are available to a person of ordinary skill in the pertinent art, it is not seen why such person would therefore should reasonably have considered to introduce an inorganic pigment into the hair conditioning composition as addressed in the teaching of *Dieing et al.*<sup>20)</sup>

The Examiner argued that *Tanner et al.* teach that the compositions comprising the surface treated micronized zinc oxide avoid the tendency of zinc oxide to agglomerate and to cause whitening, and that it would be reasonably expected that the micronized zinc oxide of *Tanner et al.* would therefore not cause an aesthetically unacceptable whitening effect.<sup>21)</sup> However, as stated above, the fact that a pigment film is aesthetically acceptable where it is applied to the skin does not suggest or even imply that the film would be equally acceptable on hair. Moreover, the Examiner's argument is deemed to be without appropriate support in the teaching of *Tanner et al.* *Tanner et al.* mention that inorganic compounds tend to agglomerate, thus losing their effectiveness and resulting in unacceptable aesthetic properties such as whitening and viscosity changes,<sup>22)</sup> and *Tanner et al.* disclose that the skin protection compositions comprising the surface treated zinc oxide in combination with the dibenzoylmethane "demonstrate unexpected photostability, chemical stability, and physical stability, as well as providing good UVA protection".<sup>23)</sup>

On the one hand it is noted that the disclosure of *Tanner et al.* merely provides that compositions which comprise the surface treated zinc oxides exhibit improved storage stability, ie. the tendency of the composition per se to undergo phase separation is reduced.<sup>24)</sup> However, this property of the surface treated zinc oxide is, in and of itself, only of interest if a person of ordinary skill in the art is faced with the question which form of zinc oxide was most likely to be suitable for a skin protection composition. That is: if a person of ordinary skill in the art wanted to provide zinc oxide in a particular skin cosmetic preparation, then the disclosure of *Tanner et al.* could motivate such a person of ordinary skill to use surface treated zinc oxide instead of another form of zinc oxide. Such an improvement of the storage stability of the composition is, however, not in and of itself, not sufficient to motivate a person of ordinary skill in the art to incorporate any form of zinc oxide into a hair conditioning composition. As such, the improvements regarding skin protection compositions which are addressed in the disclosure of *Tanner et al.* and which are achieved when surface treated zinc oxide is used instead of non-treated zinc oxide are not deemed to provide the requisite suggestion or motivation which is necessary for a person of ordinary skill in the art to do what appellants have done.

20) Note, for example, *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (CAFC 1984) which holds that there is no suggestion or motivation to make the proposed modification if the proposed modification would render the prior art invention which is being modified unsatisfactory for its intended purpose.

21) Cf. page 3, lines 22 to 26, of the Office action dated June 03, 2005.

22) Cf. col. 2, indicated lines 7 to 17, of US 5,827,508.

23) Cf. col. 2, indicated lines 18 to 27, of US 5,827,508.

24) Cf. in particular col. 3, indicated line 41, to col. 4, indicated line 16, of US 5,827,508.

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In light of the foregoing considerations the Examiner is deemed to err in her position that appellants' invention was merely based on the recognition of an advantage which "*would flow naturally from following the suggestion of the prior art*". The foregoing shows that the addition of zinc oxide to the hair conditioning compositions of *Dieing et al.* requires more than merely following suggestions which are actually found in the prior art. Correspondingly, the particular and advantageous properties which result from appellants' combination of the polymer component (A) with the inorganic UV filter (B) require more than merely the recognition of advantages which would flow naturally from doing what the art suggests.

The Board's decision in *Ex parte Obiaya*<sup>25)</sup> is also not deemed to support the Examiner's conclusion that appellants' invention was obvious under Section 103(a) in light of the teaching of *Dieing et al.* when taken in view of the disclosures of *Tanner et al.* and *George et al.* In the referenced case, the prior art taught that combustion fluid analyzers employed labyrinth heaters to maintain the samples at a uniform temperature whereas *Obiaya et al.* showed that the use of labyrinth heaters in combustion fluid analyzers unexpectedly shortened the response time of the analyzers. The Board held that this advantage would flow naturally from following the suggestion of the prior art use of labyrinth heaters. In the present case, however, the prior art relied upon by the Examiner fails to suggest the use of inorganic sunscreen agents such as the inorganic UV filters which constitute component (B) of appellants' mixture in combination with the hair conditioning polymer which is addressed in the primary reference of *Dieing et al.* Correspondingly, the prior art does not provide any incentive to incorporate the hair conditioning polymer of *Dieing et al.* into the skin cosmetic compositions which are addressed in the disclosure of *Tanner et al.* The present case is therefore distinguished from the situation which was before the Board in *Ex parte Obiaya*.<sup>26)</sup>

In order to establish a *prima facie* case of obviousness three basic criteria have to be met:<sup>27)</sup>

- (1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings,
- (2) there must be a reasonable expectation of success, and
- (3) the prior art reference or the combined references must teach or suggest all of the claim limitations.

Additionally, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and cannot be based on the applicant's disclosure.

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25) Ibid.

26) Ibid.

27) Cf. eg. MPEP §2143 quoting *In re Vacek*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (CAFC 1991).

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Neither the prior art applied by the Examiner nor the knowledge available to one of ordinary skill in the art can reasonably be construed to provide the motivation which is necessary for one of ordinary skill in the art to do what appellants have done.

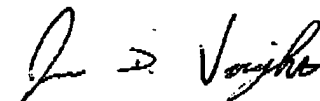
The references upon which the Examiner relied in her rejection fail to provide a reasonable motivation or suggestion and the Examiner has not referred to any knowledge which was generally available to a person of ordinary skill in the art which could substitute the lacking motivation or suggestion. Accordingly, the first of the three criteria is not met. There is also no reasonable expectation that the presence of inorganic UV protecting pigments would be useful in the context of hair conditioning preparations, or that a hair conditioning agent could serve any purpose in the context of a skin treatment composition. As such, the second criterion is also not met.

### CONCLUSION

In light of the foregoing reasons and explanations and the arguments made by appellants in the papers presented in the course of the proceedings, appellants respectfully urge that the Examiner's rejection of appellant's Claims 1 to 4 and 9 to 19 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of *Dieing et al.* when taken in view of the disclosure of *Tanner et al.* and of *George et al.* was in error. It is therefore respectfully requested that the Examiner's respective rejection be reversed. Favorable action is solicited.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 14.1437. Please credit any excess fees to such deposit account.

Respectfully submitted,  
NOVAK DRUCE DELUCA & QUIGG, LLP



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Encl.: CLAIMS APPENDIX

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## CLAIMS APPENDIX

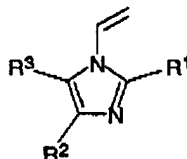
THE PENDING CLAIMS:

## 1. A mixture comprising

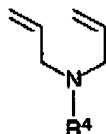
## A) at least one copolymer obtained by

(i) free-radically initiated solution polymerization of a monomer mixture of

(a) 0.01 to 99.99% by weight of at least one monomer chosen from the group consisting of N-vinylimidazoles of formula (I)



in which the radicals R<sup>1</sup> to R<sup>3</sup>, independently of one another, are hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl or phenyl, and diallylamines of formula (II)



in which the radical R<sup>4</sup> is C<sub>1</sub>-C<sub>24</sub>-alkyl;

(b) 0.01 to 99.99% by weight of at least one N-vinylacetam;

(c) 0 to 50% by weight of at least one unsaturated acid or an unsaturated anhydride;

(d) 0 to 50% by weight of at least one free-radically copolymerizable monomer which is different from (a), (b) and (c); and

(e) 0 to 10% by weight of at least one monomer having at least two ethylenically unsaturated nonconjugated double bonds which acts as crosslinker, and

(ii) subsequent partial or complete quaternization or protonation of the polymer where the monomer (a) is not quaternized or only partially quaternized, and

B) as inorganic UV filter at least one micronized metal oxide chosen from the group consisting of titanium dioxide, zinc

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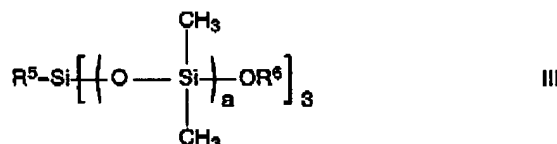
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oxide, cerium oxide, aluminum oxide, silicon oxide, zirconium oxide, manganese oxide, aluminum oxide and iron oxide.

2. A mixture as claimed in claim 1, wherein the copolymer A) is obtained by solution polymerization in water.
3. A mixture as claimed in claim 1, wherein the monomer (e) is used in a weight amount of from 0.01 to 10%.
4. A mixture as claimed in claim 1, wherein the protonation according to (ii) takes place during the preparation of the mixture.
9. A mixture as claimed in claim 1, comprising, as inorganic UV filter B), at least one hydrophobicized metal oxide chosen from the group consisting of titanium dioxide and zinc oxide.
10. A mixture as claimed in claim 9, in which the metal oxide has been coated with a silicone of the formula III



in which, independently of one another,  $\text{R}^5$  is  $\text{C}_1$ - $\text{C}_{12}$ -alkyl and  $\text{R}^6$  is methyl or ethyl, and  $a$  is a value from 4 to 12.

11. A mixture as claimed in claim 1, wherein the proportion of inorganic UV filters is 0.1 to 99.9% by weight.
12. A mixture as claimed in claim 1, comprising at least one further organic UVA and/or UVB filter.
13. A process for the preparation of cosmetic and dermatological preparations wherein a mixture is prepared as defined in claim 1, and then optionally mixed with other compounds.
14. The process as claimed in claim 13 for producing cosmetic and dermatological preparations for protecting the human skin or human hair against solar rays, wherein the mixture is prepared, and then mixed with compounds which absorb in the UV region and which are known per se for cosmetic and pharmaceutical preparations.
15. A cosmetic or dermatological sunscreen preparation for protecting the human skin or human hair against solar rays, comprising a mixture defined as in claim 1.
16. A mixture comprising

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- A) at least one copolymer obtained by
- (i) free-radically initiated solution polymerization of a monomer mixture of
    - (a) 10 to 70% by weight of 3-methyl-1-vinylimidazolium methosulfate,
    - (b) 20 to 89.95% by weight of N-vinylpyrrolidone,
    - (c) 0.05 to 5% by weight of N,N'-divinylethylenurea, and
  - (ii) subsequent partial or complete quaternization or protonation of the polymer where the monomer (a) is not quaternized or only partially quaternized, and
- B) 30 to 90% by weight, based on the solids content of the mixture, of at least one hydrophobicized metal oxide chosen from the group consisting of titanium dioxide and zinc oxide.
17. A process for protecting the human skin or human hair against solar rays, wherein an effective amount of a cosmetic or dermatological preparation prepared according to the process claimed in claim 13 is applied to the human skin or human hair.
18. A cosmetic or dermatological sunscreen preparation for protecting the human skin or human hair against solar rays, comprising one or more customary additives or solvents and an effective amount of the mixture defined in claim 1.
19. The preparation defined in claim 18, wherein the mixture constitutes from 0.001 to 30% by weight.

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